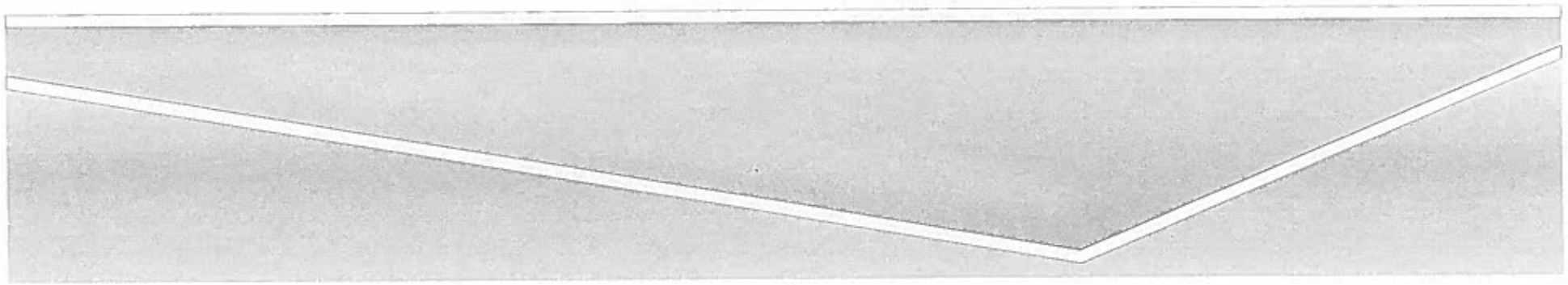
NG911 – THE BASICS

Legislative Informational

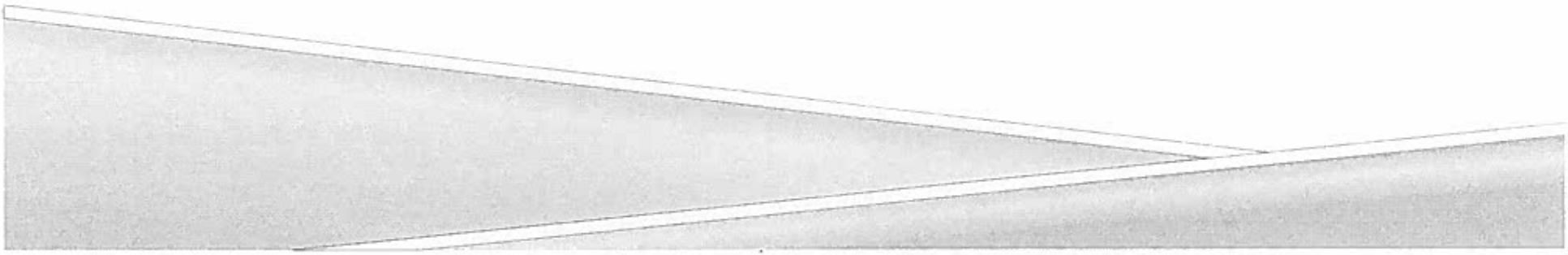
February 21, 2017



BACKGROUND

Michigan 911 enabling statute enacted 1986

- Key elements of Enhanced 911 :
  - Automatic number information (ANI)
  - Automatic location information (ALI)
  - Landline system with fixed locations
- Moderate to little State involvement:
  - SNC recommendations to Legislature on 911 funding, 911 plans, and best practices
  - 911 implemented and funded at the county/local level
  - Network was funded directly through a technical surcharge collected by the telcos
- At the national level, 911 was the States' purview and there was very little Federal involvement until the expansion of wireless devices in the early 1990s.

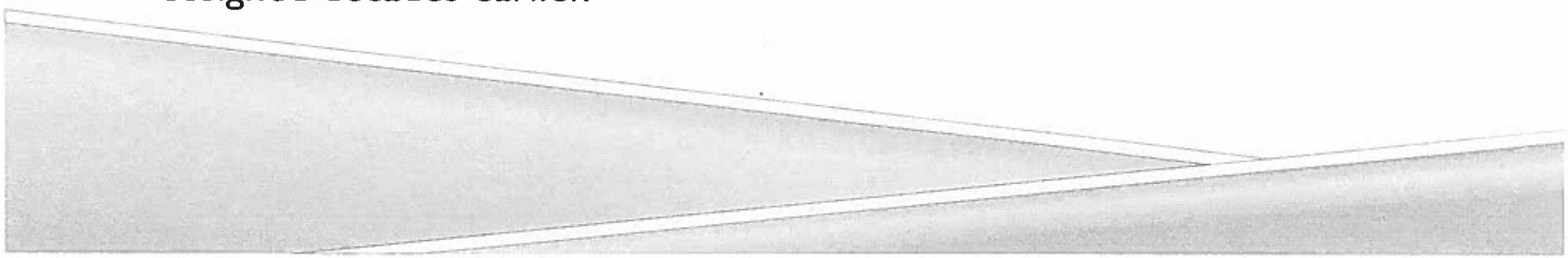


THE EXPANSION OF WIRELESS

- Early wireless 911 calls were routed to 10-digit lines, usually (but not always) to PSAPs without ANI or ALI
  - FCC Order 94-102 in 1994 was issued requiring two significant changes for wireless 911 call delivery:
    1) Direct routing of 911 calls into PSAPs on 911 trunks (selective routing) with callback information (ANI)
    2) Location information (ALI)

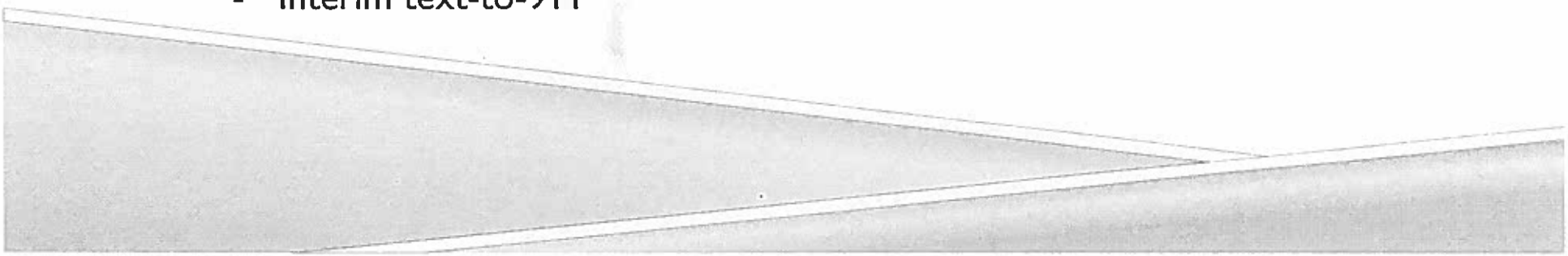
       Phase I = Tower location and callback info

       Phase II = Caller location with lat/long and callback info
- In 2000, Michigan began its 911 fee to wireless devices to assist with the costs of moving to wireless 911.
- Cellular access into 911 was retro-fitted into the existing landline system designed decades earlier.



THE EXPANSION OF VOIP

- Then, in the early 2000s, Voice over Internet Protocol (VoIP) emerged.
- Early VoIP calls, including 911, were not required to meet the regulations of traditional telephone service:
  - VoIP 911 calls did not access 911
  - After tragedies in Texas and Florida in 2005, the FCC interceded requiring:
    - Routing of VoIP 911 calls to PSAPs
    - 911 callback (ANI) and location information (ALI) with 911 calls
- Like wireless, VoIP 911 access into the 911 system was retro-fitted into the existing landline 911 system.
- With the onset of these non-traditional communication functions entering into the 911 system, others followed:
  - Telematics
  - Video Relay Service (VRS)
  - Interim text-to-911

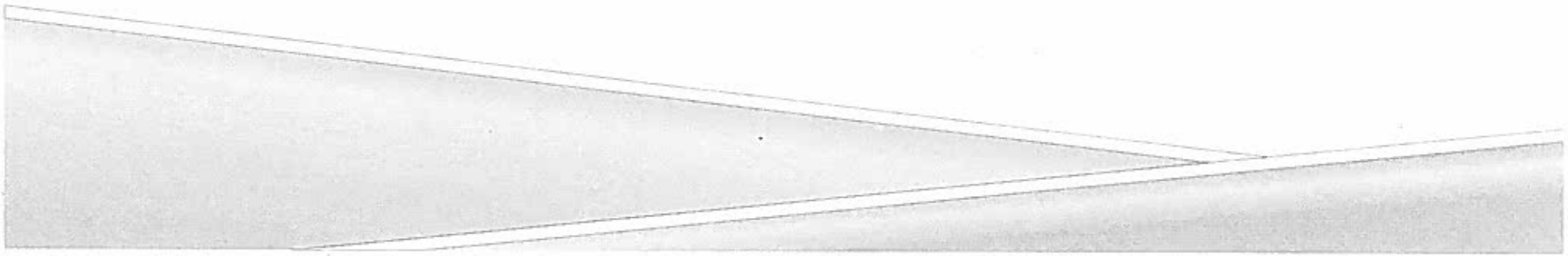


GETTING TO NG911

- The retro-fits were effective and worked.
- Today, the majority of 911 calls are initiated on a digital communication system and moved into the analog system. Functions we take for granted on our everyday devices cannot be seamlessly processed (if at all) on the current 911 system, such as:
  - Videos & pictures
  - Crash data from telematics
  - Text messaging
- Over the past decade, the private sector migration to IP-based digital systems for consumer and business communications have outpaced changes in the public safety 911network.
- Just like other infrastructure critical to commerce, transportation, and well-being, the network for 911 needs to be replaced.
- NG911 is a secure, private, public safety grade, IP-based digital 911 network (actually, a network of networks) containing the core functionality of location-based 911 call routing.

WHAT WE HAVE TODAY

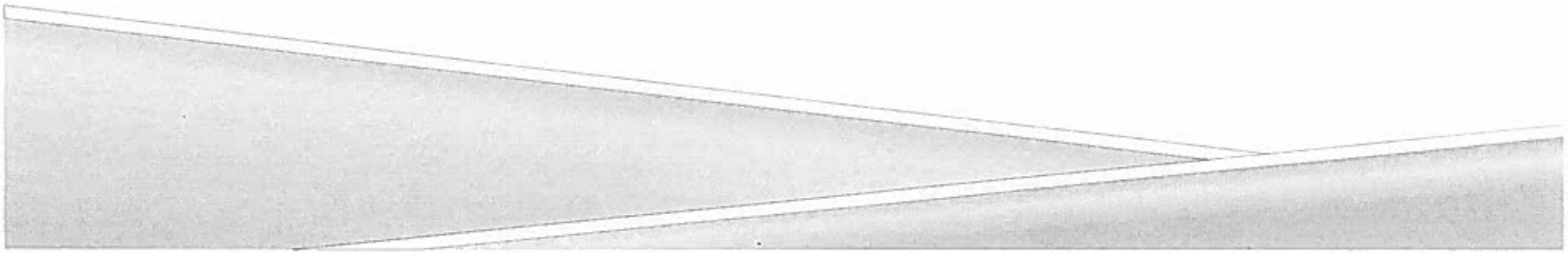
- **Wireline**
  - Most Reliable Location Technology
  - Selectively Routed to Correct Answering Point
  - Provides Call Back Number and Address
- **Wireless Phase I**
  - Provides Call Back Number
  - Provides Carrier Information and Tower Location
- **Wireless Phase II**
  - Provides Call Back Number
  - Carrier Info & Tower Location
  - Approximate Location based on X & Y Coordinates
  - Location accuracy varies between carriers and their respective technologies
- **VoIP**
  - IP calls to geographically appropriate PSAP using existing 911 network
  - Provides Call Back Number and Registered Address



WHAT BENEFITS WILL NG911 PROVIDE?

- NG 911 will provide far more bandwidth to allow increased critical data to be transmitted along with the voice call. For example, the 911 caller will be able to send video from a crime scene or accident, or photos of missing children.

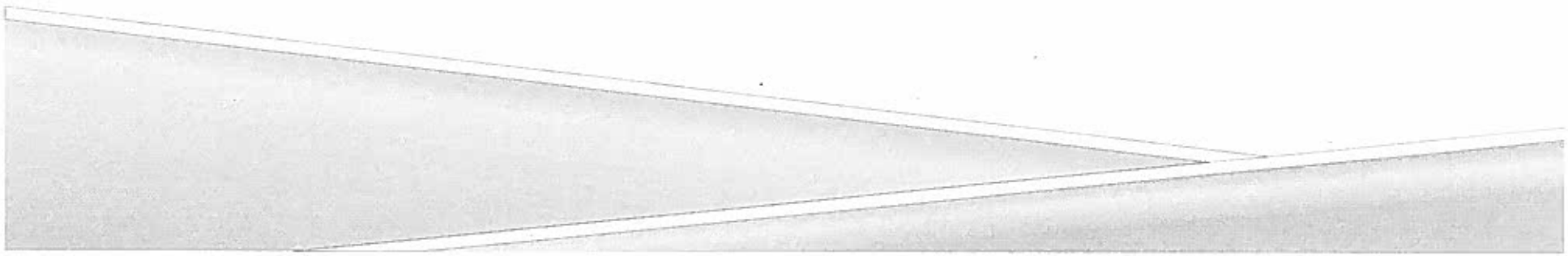
- NG911 supports a fully integrated solution for Text to 911, critical for the speech and hearing impaired, those unable to make a voice call due to limited cellular connectivity, sensitive situations such as domestic violence, and during the exercise of the "hide" option during an active shooter situation.



WHAT BENEFITS WILL NG911 PROVIDE?

- NG911 will provide greater redundancy than the legacy network, and afford PSAPs more flexibility in transferring and rerouting calls during emergency overflow events, ultimately creating "virtual" PSAP consolidation.

- Most importantly, however, wireless calls will be routed to the PSAP based upon the latitude and longitude of the caller's handset, not the sector of the tower processing the call (which may cover multiple communities or counties). This will provide much greater accuracy in routing wireless calls to the correct PSAP initially, reducing the time spent in transferring calls today.

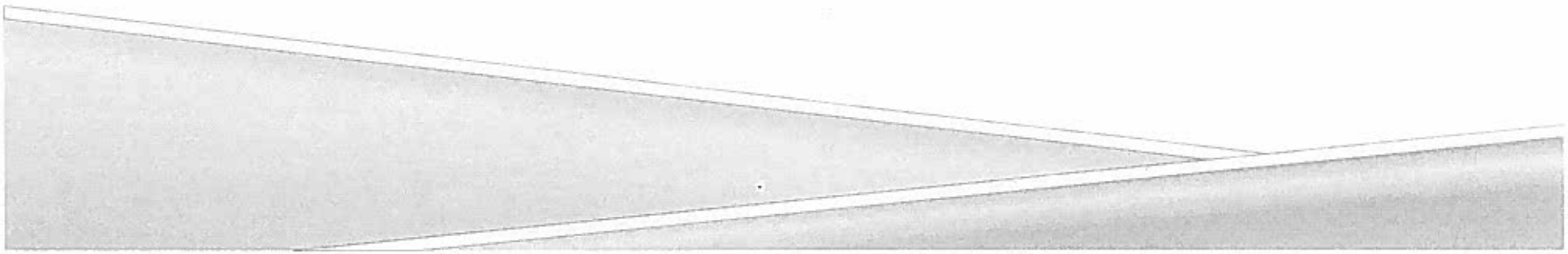


What NG911 is:

- Secure
- Reliable
- Redundant
- Flexible/capable of dynamic routing
- Open point of entry
- Scalable
- Standards-based

What NG911 is not:

- 911 on the Internet
- Isolated systems
- Flip-of-the-switch changeover
- A guarantee of lower costs

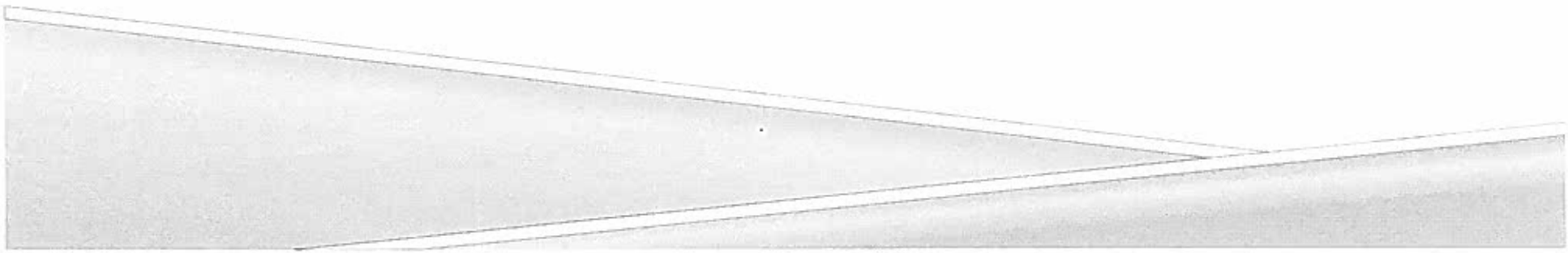


WHAT MAKES NG911 DIFFERENT THAN THE CURRENT 911 SYSTEM?

- Although NG911 will likely happen faster than the deployment of the current 911 system, dual systems will need to be in place during the migration.
- Coordination and oversight will be needed to ensure technical standards are being met.
  - Reliability
  - Redundancy
  - Security
  - Transferability
- Funding Issues
  - NG911 network is going to cost more than the current system
  - Accountability to ensure that costs are properly allocated
    - New technology
    - Merging of communications provider types
  - While legislative changes in the funding mechanism were made in 2007, the current mechanism will need re-structuring to ensure equitable support of the system.

THE "GETTING THERE" SO FAR

- Kimball Feasibility Study for IP911
- Creation of the GIS Repository
  - State and local government collaboration
  - MOU
  - Current use and future use
  - UP IP-911Project – looking at test bed for GIS routing
- UP IP-911 Network – 15 counties
- Other counties in regional efforts include six multi-county projects totaling 46 counties
- Current collaborative work is underway towards a comprehensive solution to effectively reach statewide NG911.



WHERE IS MICHIGAN AT WITH NG911?

IP Deployment Timeframes

Based on annual reporting data, 26 counties are currently receiving 911 calls via IP lines provided by Peninsula Fiber Network (PFN). An additional 33 counties have agreements in place with PFN for future deployments.

- Deployed in 2014 (15 counties)
- Deployed in 2016 (10 counties)
- Deployed in 2017 (1 county)
- Plan to deploy within 12 months (4 counties)
- Agreement signed, unknown deployment (29 counties)

Updated: 1/31/2017

HOW DOES NG911 DIFFER FROM SMART911?

- **Smart911 is:**
  - A third party service, which provides the 911 Dispatcher with personal supplemental data, such as medical history and hidden key location information, during a 911 call.
  - Requires citizen participation (opt-in and maintain accurate records).
  - Commercial web based application susceptible to down time.
  - Does not ensure call delivery to the PSAP.
  - Does not create a secure and reliable 911 call delivery system to replace the aging legacy network.

WHAT MAKES NG911 DIFFERENT THAN THE CURRENT SYSTEM?

- The amount and nature of information that can be moved through the system will be vastly increased:
  - Video & pictures
  - Third party applications and data (e.g. medical and crash data)
  - Improved location accuracy requirements
  - GIS-based routing
- The nature of information that can be moved through the system will have issues to be addressed:
  - Abuse/misuse
  - Protection of privacy
  - Policies
  - PSAP training and operations